

In collaboration, the Oklahoma Health Care Authority and the Oklahoma State Department of Health identified goals and benchmarks to reduce the incidence of, improve services for, and control complications resulting from diabetes.

Diabetes Prevention

A Report to the President Pro
Tempore of the Senate and
the Speaker of the House of
Representatives

January 2017



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Diabetes Prevention Group

Diabetes Caucus

DIABETES PREVENTION

A Report to the President Pro Tempore of the Senate and the Speaker of the House of Representatives

Executive Summary

As set forth by state law, the Oklahoma Health Care Authority (OHCA) and the Oklahoma State Department of Health (OSDH) created an action plan with identified benchmarks and goals to reduce the incidence of, improve health care services for, and control complications from diabetes. This is the first of the biennial reports that outlines how the two agencies will prevent diabetes and improve the health outcomes of people with diabetes. This report synthesizes data and information from various sources, distills efforts initiated by statewide interest groups, and recommends action for the OHCA, OSDH, and Oklahoma Legislature.

At the heart of the issue, diabetes is all too common, chronic in nature and nurture, and costly economically and to the quality of life.

COMMON

Diabetes is prevalent in Oklahoma with nearly one out of every nine Oklahomans diagnosed with diabetes. Yet, the prevalence of diabetes is underestimated. Research has shown that nearly 30% of those with diabetes are undiagnosed. Nearly 42,000 SoonerCare members have mildly elevated blood sugar, commonly termed as prediabetes, and more than 60,000 SoonerCare members have diabetes. The burden of diabetes will continue to increase unless system changes occur to identify those at risk, diagnose those who are unaware they have diabetes, ensure timely preventive care for those with diabetes, and, most importantly, prevent the development of diabetes.

CHRONIC

Diabetes is a chronic disease, noncommunicable, of long duration, and slow progression. A life course approach recognizes the connections between individuals and the historical and socioeconomic contexts in which they live. The linkages between individuals, families, the environment, and events influence future decisions and occurrence of disease. There is need for life course and prevention approaches to address diabetes in Oklahoma. Additional data across the life course can enhance understanding and decision-making.

COSTLY

The burden of diabetes reaches far beyond the costs of medical care. Nearly one-third of Oklahomans of working-age with diabetes reported not being able to work. Thousands of Oklahomans with diabetes and their families experience diminished quality of life. The provision of better care in the community could save nearly \$16 million dollars a year if avoidable diabetes-related hospitalizations were reduced by 20% (MONARHQ, 2014). Furthermore, preventing diabetes would reduce the burden of disease and health care costs associated with this condition.

Answering the Call

Diabetes can be prevented and the burden of diabetes can be lessened. Evidence-based strategies are established and well known. In addition, solutions reside in both community and clinical care. Several

diabetes prevention programs have been shown to be cost effective with some being cost saving. Moreover, ensuring preventive care for SoonerCare members with diabetes has shown a financial return on investment.

Goals, Objectives, and Benchmarks

Together, the OHCA and OSDH will implement the action plan to achieve the goals and objectives of the action plan.

Goal 1: Reduce the Incidence of Diabetes

Objective 1.1: Prevent the development of risk factors

Goal 2: Improve Services for Those with Diabetes

Objective 2.1: Increase the percentage of people with diabetes who receive on-time recommended preventive services

Objective 2.2: Increase the number of SoonerCare members who complete diabetes self-management education

Goal 3: Prevent Complications from Diabetes

Objective 3.1: Reduce smoking among people with diabetes

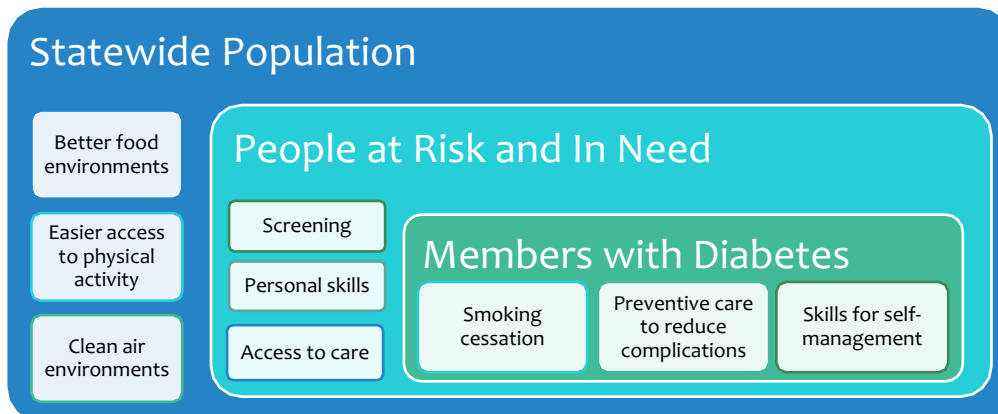
Objective 3.2: Reduce preventable hospitalizations from undiagnosed diabetes

Goal 4: Increase Understanding of the Prevalence and Incidence of All Types of Diabetes

Objective 4.1: Expand public health surveillance of all types of diabetes

Key benchmarks will measure the progress of the action plan.

KEY BENCHMARKS FOR ACTION PLAN



Addressing diabetes prevention goes beyond the OHCA and OSDH. Efforts by our partners from around the state, including the Diabetes Caucus and the Diabetes Prevention Group, will greatly contribute to diabetes prevention efforts in Oklahoma.

There is an urgency to addressing diabetes in Oklahoma. Oklahoma needs to adopt the definitive course of action outlined in this report to leverage partnerships, federal dollars, evidence-based strategies, and new resources. Time-limited federal grants and matched state funds provide for chronic care for a limited SoonerCare population and exceedingly limited type 2 diabetes prevention. Legislative action can improve Oklahoma's ability to respond to the diabetes epidemic.

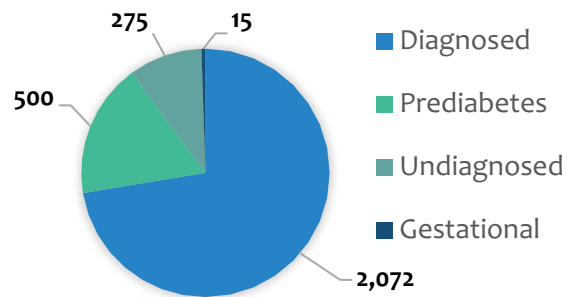
Introduction

Diabetes includes a group of conditions in which the body does not produce and/or use insulin properly. Insulin is a hormone that assists in storage of dietary sugar in a form that the body can utilize to obtain the energy it needs for daily life. High levels of blood sugar or glucose result from the lack of insulin as with type 1 diabetes or insufficient insulin and insulin resistance as with type 2 diabetes. Some people are genetically more susceptible to develop diabetes. Viral infections or environmental toxins may trigger type 1 diabetes. Type 2 diabetes may be triggered by a variety of factors such as aging, ethnicity, family history, obesity, physical inactivity, smoking, over nutrition, or poor nutrition (Remington, 2010). Gestational diabetes is glucose intolerance identified during pregnancy. Both mother and baby are at increased risk of developing type 2 diabetes. Source: IDF, 2011

According to the Centers for Disease Control and Prevention (CDC), Oklahoma's age-adjusted prevalence of diabetes (10.9) was the ninth highest state rate in 2014. Moreover, 27.8% of people with diabetes were undiagnosed (CDC, 2014). Furthermore, nine out of 10 people with prediabetes do not know that they have it (CDC, 2014). The estimated medical costs of diabetes in Oklahoma are great and vary by type (Figure 1).

FIGURE 1. ESTIMATED MEDICAL COSTS IN MILLIONS OF DOLLARS FOR DIABETES BY TYPE, OKLAHOMA, 2012

Source: Dall, 2014



In Oklahoma

In 2015, more than one out of every nine adults in Oklahoma had diagnosed diabetes, according to the Behavioral Risk Factor Surveillance System (BRFSS). In addition to the estimated 11.7% of adults with diabetes, another 0.8% had gestational diabetes. Many Oklahomans have elevated blood sugar that puts them at risk of developing type 2 diabetes. Source: BRFSS, 2015, unadjusted rates

An estimated 100,000 Oklahomans have undiagnosed diabetes and more than one million more have elevated blood glucose (prediabetes).

Source: Dall, 2014

For non-gestational diabetes, a statistically higher proportion occurs among males (51.7%) than females (48.3%). Diabetes occurs most often among persons 65 years or older with nearly one-quarter (23.0%) of Oklahoma seniors with diagnosed diabetes. Among persons 35-64 years of age, 13.0% have diabetes compared to 2.0% among those 18-34 years of age. Diagnosed diabetes was highest among American Indians (16.3%) and Blacks (13.6%) compared to Whites (11.2%) and Hispanics (7.9%). The rates of gestational diabetes and prediabetes were not statistically different by race/ethnicity. Those with household incomes of \$75,000 or higher were least likely to have diabetes (7.8%). Source: BRFSS, 2011-2015

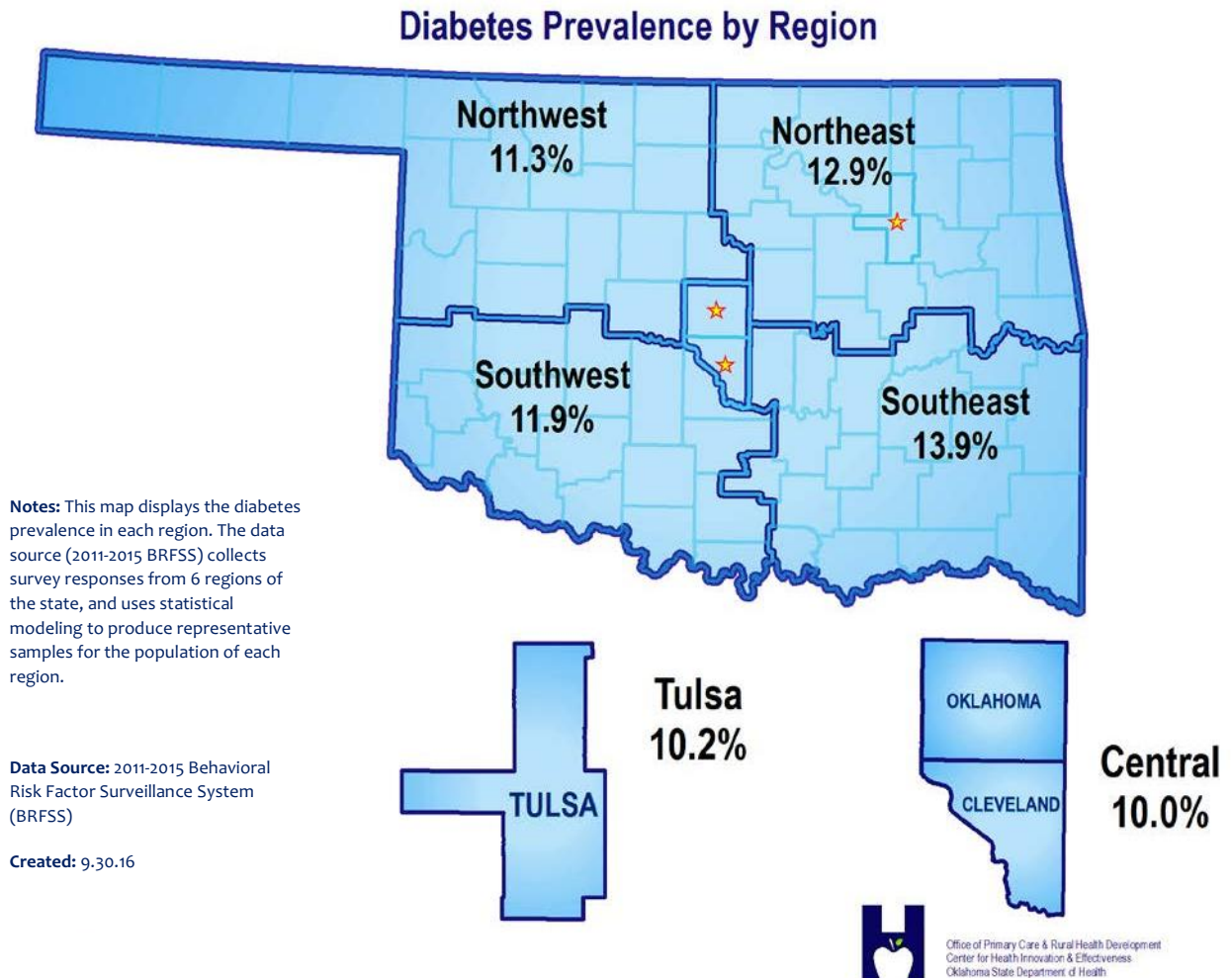
Among persons 18 - 64 years of age with diabetes, 30.3% reported being unable to work. The same group experienced health challenges during the past year: 10.9% had a lapse in insurance coverage, 11.7% did not have a personal doctor or health care provider, and 22.7% did not take prescriptions because of the costs. Source: BRFSS, 2011-2015

Diabetics who experience food insecurity (worry about having enough food to eat) have higher A1C (10%) compared to diabetics without food insecurity (7.6%).

Source: Rotberg, 2015

Of Oklahomans with diabetes, half (51.2%) were diagnosed between the ages of 45-64 years, followed by 20-44 years (30.4%), 65 years and older (15.9%), and younger than 20 years (2.5%). Map 1 shows the prevalence of diabetes is higher in rural areas compared to the most populated areas. Source: BRFSS, 2011-2015

MAP 1. ADULTS WITH DIABETES BY REGION



Diabetes is a major cause of renal failure, non-traumatic lower limb amputations, and new cases of blindness, heart disease, and stroke.

Source: CDC, 2011

Among senior Oklahomans, those with diabetes were more likely to report cardiovascular conditions compared to those without diabetes:

- Angina: 22.3% among those with diabetes and 12.0% among those without diabetes.
- Heart attack: 21.2% among those with diabetes and 12.1% among those without diabetes.
- High blood pressure: 80.4% among those with diabetes and 60.9% among those without diabetes.

Source: BRFSS, 2011-2015

Among all ages, persons with diabetes were more likely to report limited activities (50.6%) than those without diabetes (22.5%). Additionally, persons with diabetes were more likely to report ever having a depressive disorder (33.5%) than persons without diabetes (20.5%). *Source: BRFSS, 2011-2015*

In 2014, the total charges for diabetes-related hospital discharges in Oklahoma totaled \$251,671,572, excluding

Risk Factors Associated with Diabetes and Higher Hospital Admissions

- ❖ Duration of disease
- ❖ Family history of diabetes
- ❖ Limited access to care
- ❖ Lower socioeconomic status
- ❖ Older age
- ❖ Low HDL cholesterol, high triglycerides, or high blood pressure
- ❖ Overweight
- ❖ Native Americans, Blacks, and Hispanics
- ❖ Women who had gestational diabetes

Source: AHRQ, 2007

TABLE 1. DISCHARGES FOR DIABETES BY AGE

Source: Hospital Discharge, 2014

Age	Discharges
1-14 years	190
15-24 years	842
25-34 years	828
35-44 years	1,000
45-54 years	1,445
55-64 years	1,358
65+ years	1,610

federal and tribal facilities. The payer for the most diabetes-related hospital discharges was Medicare (2,859), followed by commercial (1,515), Medicaid (1,401), uninsured (1,200), and other (289). Nearly one-third (32.9%) of the diabetes related discharges among 25-34 year olds were uninsured/self-pay. Similarly, more than one-quarter of diabetes discharges among those 35-44 years (27.8%) and 15-24 years (27.2%) were uninsured/self-pay. Persons less than 65 years of age accounted for more hospitalizations for diabetes compared to persons 65 years and more (Table 1).

Burdens Not Measured

People with diabetes and their families or caregivers often experience an associated reduced quality of life that is not captured by economic estimates.

Source: Dall, 2014

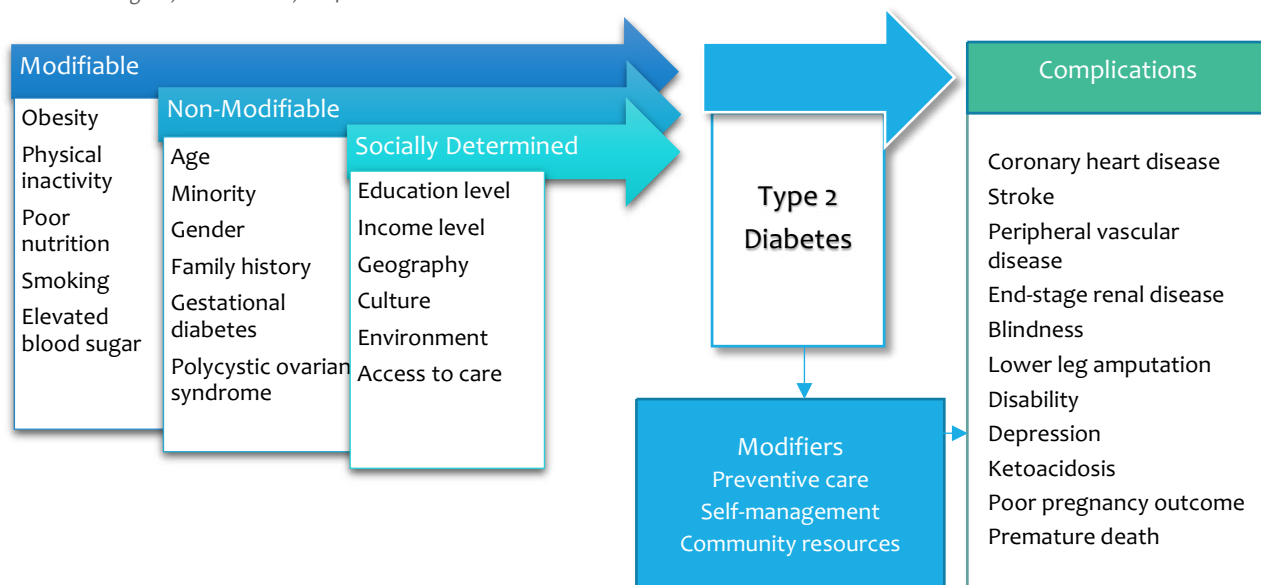
In 2014, there were 2,474 hospital stays for short-term complications of diabetes. More than \$4.2 million could be saved annually by reducing those stays by 20%. During the same year, there were an additional 2,785 hospital stays for long-term complications of diabetes. A 20% reduction in these stays could save nearly \$7.7 million a year. In addition, 554 Oklahomans were hospitalized to have a toe or foot removed due to complications of diabetes. Nearly \$2.8 million dollars a year could be saved with a 20% reduction in stays related to amputation. Hospital stays as these are not always avoidable, but could be with quality clinical and community care. *Source: MONAHRQ, 2014*

Of the 1,442 deaths from diabetes in 2015, the majority (77.7%) were White. In total, 69.0% of the deaths were among those 65 years and older. Those over 75 years accounted for 43.3%. However, once adjusted for age, a disproportionate burden falls upon minority populations. The diabetes age-adjusted death rate per 100,000 persons was highest among Blacks (57.7), followed by American Indians (55.5), Whites (29.1), and Asians (26.4). *Source: Vital Statistics, 2015*

Only type 2 diabetes is considered preventable, meaning that some individual risk factors are modifiable (Figure 2). In addition, there are modifiers that can limit complications of type 1, gestational, and type 2 diabetes.

FIGURE 2. TYPE 2 DIABETES: CAUSES AND COMPLICATIONS

Source: Remington, 2010 and NIH, 2014



The individual risk factors that are modifiable are evident across the age spectrum (Table 2).

Some community conditions do not support individual behavior change. In Oklahoma, 34.6% of the population report that it is not easy to purchase healthy food in their neighborhood. Among employed Oklahomans, 69.8% are not protected by a totally smoke-free policy in the workplace. *Source: BRFSS, 2011-2015*

The risk of complications from diabetes increases with the lack of medical care and community services. Of those with diabetes, 55.6% reported taking a course on how to manage their diabetes. Those who reported taking insulin for their diabetes were statistically more likely to have taken a course (72.2%) compared to those not taking insulin (48.8%). Nearly two of every five (39.0%)

Oklahomans with diabetes report not having a dilated eye exam in the past 12 months. Even among those who reported being told that diabetes has affected their eyes or they had retinopathy, 28.5% reported not having a dilated eye exam in the past 12 months. Smoking exacerbates diabetes and its complications. Nearly 20% of those with diabetes are current smokers. *Source: BRFSS, 2011-2015*

The prevention of type 2 diabetes can be achieved through changes in individual behaviors and community contexts. The prevention of the complications from type 1, gestational, and type 2 diabetes can occur within medical care and community services.

Comprehensive Approach

While the majority of funding for health care is spent on the delivery of medical care, the collective health of Oklahomans is impacted by other dynamics, including biologic and genetic makeup, environmental and social circumstances, and individual behaviors. Health care and genetics account for approximately 40% of the causes that determine premature death (Schroeder, 2007). Social determinants, based on where people are born, grow, live, work, and age, account for the remaining 60%. Factors such as limited education, access to healthy food, employment, income, social supports, and behaviors are recognized for their relationship to the soaring incidence of type 2 diabetes (Hill, 2013).

Communities must work together to ensure that all Oklahomans have access to appropriate, cost-effective care, and community supports that promote healthy behaviors, wellness, and risk-reduction for diabetes. Cultivating community and environmental conditions can grow support for healthy lifestyles.

Overall health improvement will take collaboration among multiple partners within the community and the health system. The Expanded Chronic Care Model (Figure 3) illustrates the need to improve

TABLE 2. STATUS OF MODIFIABLE RISK FACTORS FOR DIABETES, OKLAHOMA

Source: YRBS, 2011-2015 and BRFSS, 2013-2015

Risk Factor	9 th -12 th graders	18-34 years	35-64 years	65+ years
Obesity	15.3%*	28.2%	38.2%	28.0%
Physical inactivity	12.6%*	23.3%	32.5%	41.1%
Poor nutrition	87.5%*	28.2%	23.6%	23.0%
Smoking	10.6%	26.8%	24.0%	11.4%

* Youth Risk Behavior Survey (YRBS) measures obesity as adolescent body mass index (BMI) percentage, physical inactivity as <60 minutes per day physical activity for past week, and poor nutrition as <3 vegetables servings per day for the past week. BRFSS measures obesity as >29 BMI, physical inactivity as no leisure time activity, and poor nutrition as < 1 serving of vegetables daily.

the care system, integrate health delivery with community resources and policies, and address influences on physical activity, nutrition, and other determinants of health (IOM, 2012). The model emphasizes five action areas: build healthy public policy, create supportive environments, strengthen community action, self-management, and comprehensive health services.

All of the individual, community, and health system elements must work together in shared responsibility. The sharing of ideas, resources, and people between the community and the health systems can improve clinical and population health. As a chronic disease, diabetes is

FIGURE 3. EXPANDED CHRONIC CARE MODEL

Source: Barr, 2003

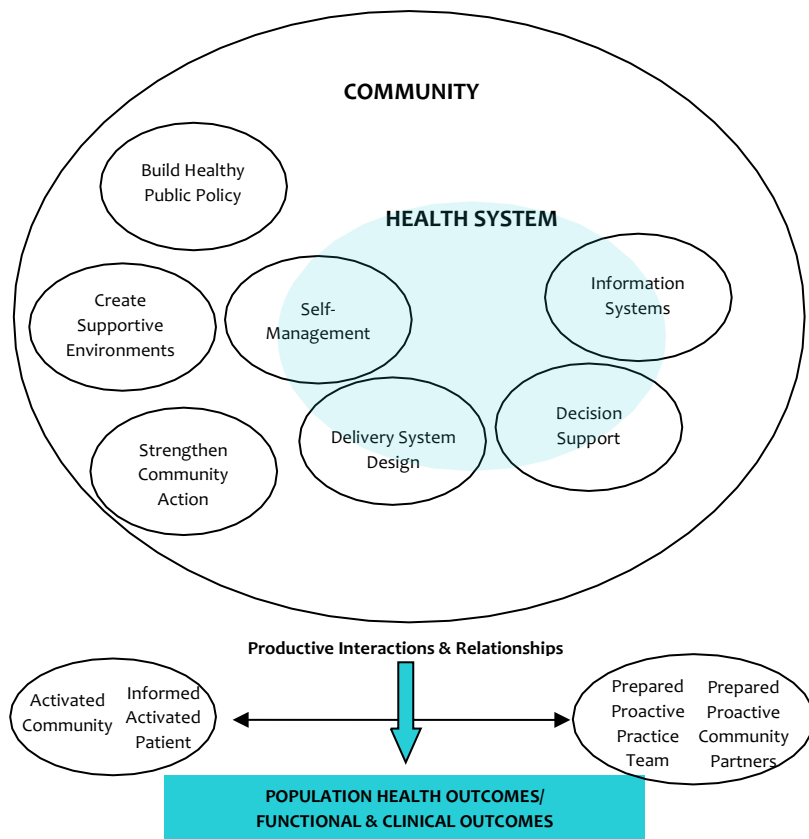
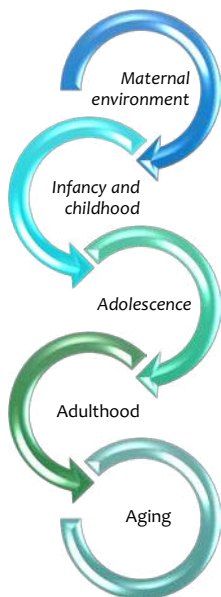


FIGURE 4. FIVE STAGES OF LIFE COURSE

Source: ACC/SCN, 2000



not self-limiting, but spans a lifetime. Biology, environment, and social factors, interact during an entire lifetime (Figure 4) to influence health and disease in later life.

Interventions focused on preventing or delaying chronic diseases across the continuum must be implemented with a long-term perspective and sustained effort. Diabetes increases the risk of functional impairment, developing other chronic diseases, disability, and death. These negative consequences of diabetes are more common when regular medical care and community supporting care are absent.

We do not know everything about the life course of diabetes, especially gestational diabetes or diabetes in children. Actionable data across the life course is needed for improved decision-making and evaluation of interventions. With the information that is known, it is clear that improving the health of the population will take a comprehensive and systematic approach.

Fiscal Impact of Diabetes Services

Table 3 illustrates that state payers' experience is different from commercial and federal payers' experiences. Of Oklahomans with diabetes, the majority have Medicare coverage (42.0%), followed by employer insurance (28.2%), Medicaid (10.1%), family insurance (7.0%), military (6.0%), Indian Health Service/Tribal care (5.4%), and other (1.2%). *Source: BRFSS, 2015*

TABLE 3: COST OF CARE BY PAYER IN OKLAHOMA

SOURCE: MILLIMAN, 2015

	Commercial Insurance	Medicare	Medicaid
Average Annual Cost	\$4,993	\$9,885	\$4,746
Prevalence of Diabetes	5.2% ¹	25.9% ¹	4.5% ²
Condition Cost Relative to Average Member	349%	157%	232%

1= CY 2013 sample claims data, 2=OHCA Diabetes Analysis SFY 2014

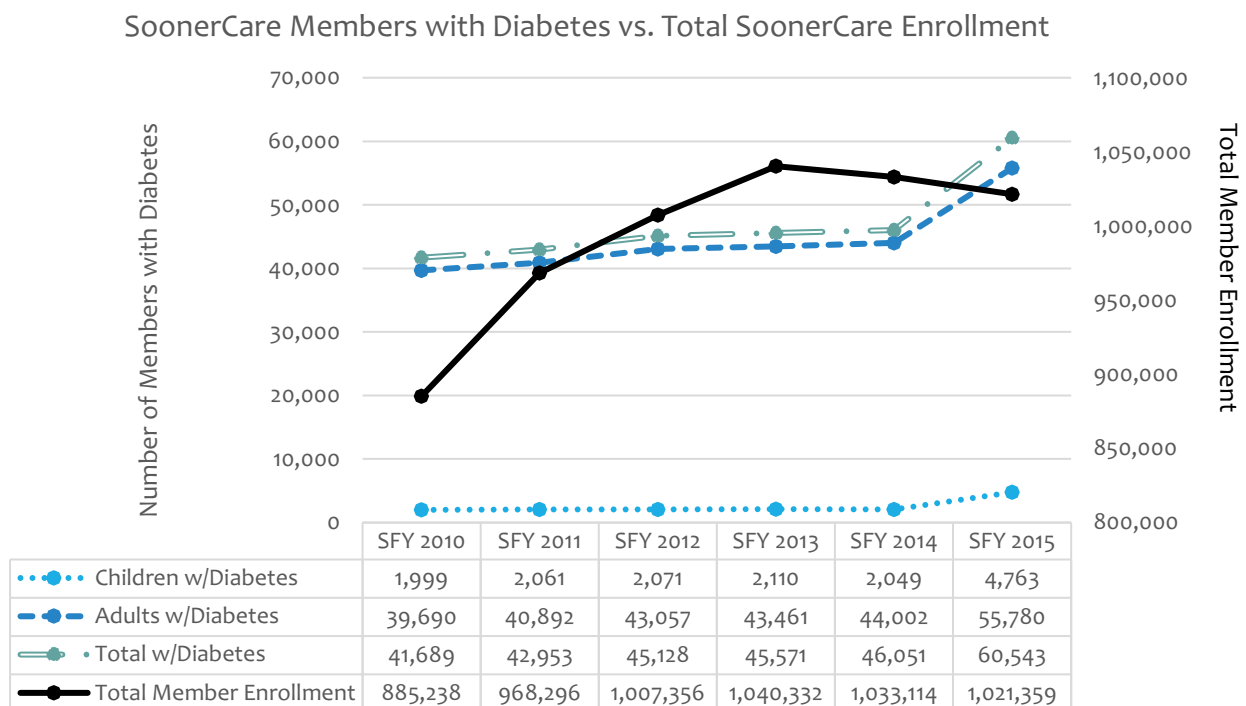
The fiscal impact of all types of diabetes on the OHCA, OSDH, and county health departments is also quite varied. Of the state dollars provided to the OHCA and OSDH, the vast majority provide for health care services through SoonerCare.

Oklahoma Health Care Authority

SoonerCare is the safety net health care benefits provider for low-income Oklahomans, primarily children, pregnant women, seniors, and persons with disabilities, funded through a blend of state and federal funds. SoonerCare enrollment remains fairly steady; yet by SY 2015, the number of members with diagnosed diabetes has increased to one in five adults (Figure 5).

FIGURE 5. TRENDS OF SOONERCARE MEMBERS WITH DIABETES

Source: OHCA, 2016



In SFY 2015, SoonerCare had 60,543 members or 6% of its population diagnosed with diabetes with a total (non-diabetes and diabetes-related) reimbursement of \$823,847,232 (OHCA, 2016). For services provided in SFY 2015, SoonerCare reimbursement for in-patient hospital stays due to diabetes diagnoses was \$27,832,618 (as of 05/09/16). Many SoonerCare members also have prediabetes (Table 4).

The increase in diagnoses of diabetes in SoonerCare members from SFY 2014 to SFY 2015 is partly attributed to multiple agency efforts to increase A1C testing, provider education, member outreach, and increased use of health coaches in the SoonerCare community.

Most of the members with diabetes have type 2 (Figure 6). Table 5 shows that 11 times as many adult SoonerCare members have diabetes than child SoonerCare members. The table also indicates that the majority of adults with diabetes are dual eligible. Dual members have both Medicaid and Medicare.

The trends in diabetes among SoonerCare members are different from those in the general population. Table 6 shows SoonerCare members with diabetes by age group and type. The age group with the largest number of members with diabetes is 46-64 years, whereas the largest number in the general population is among those 65 years and more. Males

TABLE 6. SOONERCARE MEMBERS WITH DIABETES BY AGE GROUP AND TYPE

Source: OHCA, 2016

Age Group in Years	Type 1	Type 2	Total
0-20	1,946	2,817	4,763
21-45	3,683	9,996	13,679
46-64	6,619	17,008	23,627
Over 65	4,617	13,857	18,474
Total	16,865	43,678	60,543

TABLE 4. PREDIABETES AMONG SOONERCARE ADULTS

Source: OHCA, 2016

Year	Number
CY 2013	39,730
CY 2014	41,414
CY 2015	41,735

Diagnosis codes: 27801, 27800, 27803, 27802, and 79029.

FIGURE 6. SOONERCARE MEMBERS WITH DIABETES BY TYPE

Source: OHCA, 2016

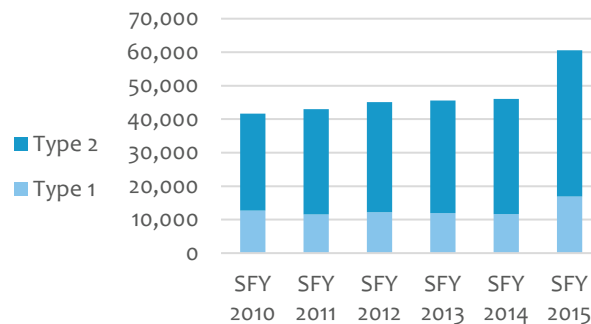


TABLE 5. SOONERCARE MEMBERS WITH DIABETES BY ELIGIBILITY TYPE, COSTS, AND LIFE STAGE, SFY 2015

Source: OHCA, 2016

Type	Members (#)	Total Costs	Cost per Member
Child			
Dual	18	\$12,830	\$713
Non-Dual	4,745	\$40,416,692	\$8,518
Total	4,763	\$40,429,522	
Adult			
Dual	31,620	\$53,181,317	\$1,682
Non-Dual	24,160	\$730,236,393	\$30,225
Total	55,780	\$783,417,710	

Costs based on dates of service and include all claims

typically have a higher rate of diabetes. However, males represent 32% of SoonerCare members with diabetes, but they represent 43% of the total SoonerCare membership. American Indians represent 9% of SoonerCare members with diabetes, while representing 10% of total SoonerCare enrollment. African Americans represent 13.6% of the SoonerCare members with diabetes, yet account for 12% of the overall SoonerCare population.

Male SoonerCare members identified as having diabetes incurred higher costs per person than female SoonerCare members with diabetes. The cost per male member with diabetes in SFY 2015 was \$15,144 while the cost per female member with diabetes was \$12,889. Enrollment criteria account for members who may be sicker or less resourced than the general population. It is likely that more preventive and consistent care among males with diabetes would lower the cost. The trend differences in diabetes between the general population and the SoonerCare population are most likely attributed to SoonerCare's eligibility criteria.

SFY 2015 SoonerCare reimbursement of all claims (not just cost for diabetes-associated care) for members with diabetes by type:

Type 1: \$263,378,824

Type 2: \$560,468,408

Nerve disease and poor circulation among type 2 diabetics are two of the primary reasons for amputation of the lower limbs for diabetics. Eighty-one percent of the SoonerCare members who had an amputation had diabetes (338 of 419) with amputation-related reimbursement cost of \$5,011,047. Amputation numbers have greatly decreased in the last decade. Amputation numbers will continue to decline with appropriate management and medical attention when warning signs occur. End Stage Renal Disease (ESRD) is another complication of diabetes. Two-thirds (67%) of the 3,521 SoonerCare members who had ESRD also had diabetes, resulting in an ESRD-related reimbursement of \$50,257,247.

Emergency Department (ED) utilization is important to consider when evaluating the overall health of SoonerCare members. High ED utilization generally indicates that the overall health of the member is unstable. Adult members with type 2 diabetes have higher ED utilization and total costs while adult members with type 1 diabetes have a higher cost per member (Table 7).

TABLE 7. SUMMARY OF ADULT AND CHILD EMERGENCY DEPARTMENT USAGE BY DIABETES TYPE AND COSTS

Source: OHCA, 2016

Type of Diabetes	CHILD					ADULT				
	Number of ED Visits	Total Cost	Cost per Member	Utilizing Members	Cost per Utilizing Member	Number of ED Visits	Total Cost	Cost per Member	Utilizing Members	Cost per Utilizing Member
Type 1	1,850	\$1,815,178	\$933	867	\$2,094	13,744	\$23,397,128	\$1,568	3,715	\$6,298
Type 2	2,912	\$1,917,251	\$681	1,236	\$1,551	27,414	\$37,936,551	\$928	8,997	\$4,217
Total	4,762	\$3,732,429	\$1,613	2,103	\$3,645	41,158	\$61,333,679	\$2,497	12,712	\$10,515

The reimbursement for ED utilization in this report may be higher than other reported amounts by OHCA due to differences in methodology. For this report, ED data was pulled using incurred dates rather than paid dates and includes all costs incurred on the date of the ED visit, not just ED specific claims based on ED procedure and ED revenue codes.

The complete *Diabetes Analysis SFY 2010 – SFY 2015* is available at the OHCA website, <http://www.okhca.org/research.aspx?id=87>. Additionally, 2,494 SoonerCare members received state therapeutic code 58 (diabetic therapy) but did not have a diagnosis of diabetes, and therefore are not included in the diabetes total for the analysis.

Oklahoma State Department of Health

The OSDH receives no state-appropriated funding specifically designated for diabetes prevention. Time-limited federal funding supports most diabetes-related efforts at the OSDH.

The OSDH administers the legislatively created uncompensated care fund in partial support of Federally Qualified Health Centers (FQHCs) that provide primary care services in medically underserved urban and rural communities (Map 2). Little to no diabetes care is supported by the funds.

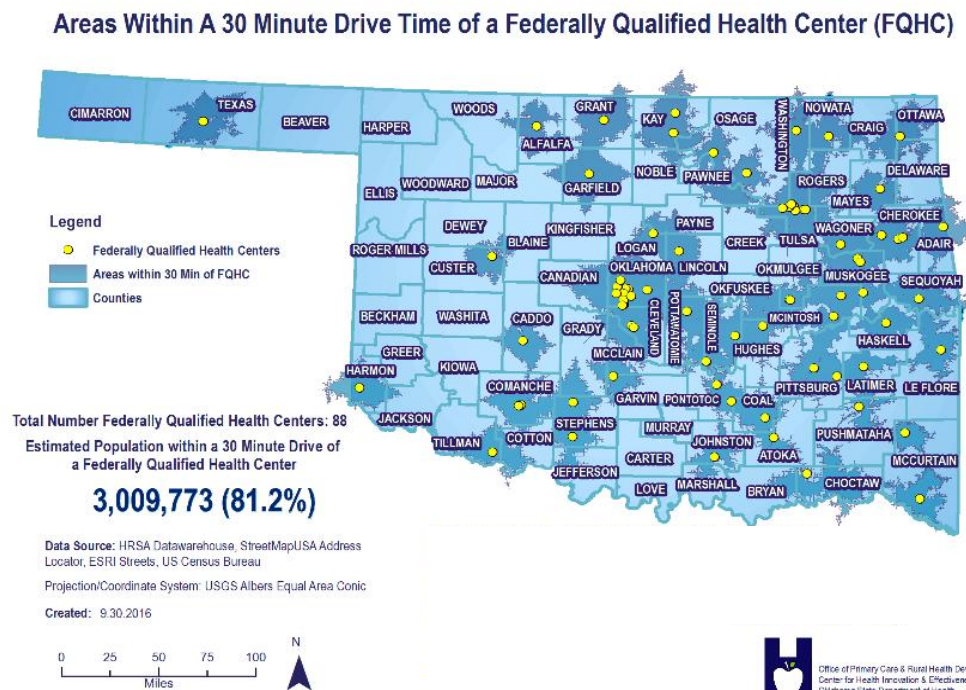
An unfunded state mandate calls for five school nurses to provide school staff training on diabetes, recognition of symptoms, and insulin administration. This work is supported by federal funds.

Awarded federal dollars provide for much of the population-based surveillance

that, in small part monitors the adult prevalence of diabetes and health-related behaviors. Non-appropriated funds support the hospital discharge database, which contains data on hospitalizations from diabetes and diabetic complications. In addition, the rate of preventable hospitalizations and associated charges are estimated using the hospital discharge data.

The CDC awarded Oklahoma a 5-year grant of \$853,217 (DP13-1305) for worksites, schools, early childhood education services, state and local government agencies, and community settings to promote healthy behaviors. In addition, efforts include expanding access to healthy choices for people of all ages related to diabetes, cardiovascular health, physical activity, healthy foods and beverages, obesity, and breastfeeding. The grant also calls for improvement of the delivery and use of quality clinical and other health services aimed at preventing and managing high blood pressure and diabetes

MAP 2. FEDERALLY QUALIFIED HEALTH CENTERS IN OKLAHOMA, 2016



and increased linkages between community and clinical organizations to support prevention, self-management, and control of diabetes, high blood pressure, and obesity. Of the total award, slightly more than \$421,000 is allocated for diabetes. Funding ends June 2017.

The OSDH was awarded a 5-year grant of \$2,640,000 from the CDC (DP14-1422PPHF-14) to prevent obesity, diabetes, heart disease, and stroke and reduce health disparities through community and health systems interventions. Of the award, just over \$372,000 is dedicated to diabetes. Half of the funds are required to support prevention activities in communities. Prediabetes and hypertension demonstration projects are located in Carter, Comanche, LeFlore, Lincoln, McCurtain, Pittsburg, Seminole, and Sequoyah counties. Funding ends August 2018.

County Health Departments

The county health departments affiliated with the OSDH do not receive state appropriated dollars for diabetes programs. Federal dollars are the funding source for the limited pilot projects mentioned in the preceding paragraphs.

Fiscal Impact Compared to Other Chronic Diseases

The Oklahoma State Innovation Model (OSIM) grant, a federally-funded project, conducted a financial analysis to assess the relative costs of the OSIM flagship issues within Oklahoma's commercial markets and state-purchased health care, focusing on the most prevalent and expensive chronic conditions. Table 8 illustrates the increased health expenditures of those with chronic conditions compared to the

TABLE 8. COST OF CARE FOR DIABETES COMPARED TO OTHER CONDITIONS BY PAYER, OKLAHOMA

Source: SHSIP, 2016

Condition	Total Cost of Care Per Member Per Month			
	Commercial	Medicare	EGID	Medicaid
General Population	\$416	\$822	\$422	\$395
Diabetes	\$1,452	\$1,291	\$929	\$1,610
Hypertension	\$1,178	\$1,044	\$740	\$1,510
Behavioral Health	\$1,302	\$1,841	\$724	\$880

EGID=Employee Group Insurance (>200,000 state employees) and Medicaid=SoonerCare (>825,000 members).

EGID and Medicaid estimates based on a generalized 115% from published literature.

general population. Comorbidities occur when two chronic diseases or conditions are present in a patient at the same time. It is very important when looking at a person's health to observe all the elements that affect overall health. Diabetes and cardiovascular disease are one set of the most common comorbidities. Those with long-term illnesses like diabetes commonly experience depression. There is even a linkage between cancer and diabetes (USDHHS, 2010).

State funding partially matches the OSDH's Breast and Cervical Cancer Early Detection and Prevention (BCCEDP) grant award from CDC. The state funding provides \$388,532 in match to leverage an additional \$1,165,687 in federal funding (OSDH, 2016). Additionally, the Oklahoma Legislature provides \$200,000 for colorectal cancer screening. Diabetes status is not a screening criterion. Service eligibility is based upon nationally accepted screening criteria, age, and lack of insurance.

For OHCA, the majority of all SoonerCare members suffer from one or more comorbidities. Sixty-eight percent of members with diabetes also had hypertension, a disease that can exacerbate some symptoms of diabetes. Chronic Lower Respiratory Disease (CLRD), which is normally caused by tobacco use, affected more than one-third of SoonerCare members with diabetes (Table 9).

TABLE 9. SELECTED COMORBIDITIES OF SOONERCARE MEMBERS WITH DIABETES, SFY 2015

Source: OHCA, 2016

Comorbidity	Member Count	% of Diabetes Population	Chronic Disease Reimbursement
Depression	6,774	11.2%	\$13,694,214
Heart Failure	12,002	19.8%	\$59,396,065
Chronic Lower Respiratory Disease	21,051	34.8%	\$63,540,900

Due to the high rates of comorbidities in the chronic disease population, special outreach and preventive efforts should be made when someone is identified as having a chronic disease. By early detection of comorbidities, the chronic disease of interest could be potentially managed better, and therefore, reduce health complications and costs later in life.

Relationships exist between chronic diseases, risk factors, populations at risk, age groups, and preventive services. These connections should influence how and where the evidence-based strategies and preventive services are incorporated into the community and health systems.

Assessment of the Benefits of Diabetes Prevention Programs

According to the 2014 National Diabetes Statistics Report, prediabetes affects about one out of three American adults. The 2014 CDC report states that without any intervention, 15% to 30% of people with prediabetes develop type 2 diabetes within five years. Success in preventing diabetes is based both in evidence-based strategies and in community ownership.

Evidence-Based Strategies and Preventive Services

Evidence-based strategies save valuable time and resources by using interventions proven to work. Funders often prefer the use of evidence-based solutions for program accountability, reduced trial and error, and saved resources. Most importantly, however, any evidence-based strategy implemented must fit with the community, its values, culture, and resources.

Three resources identify strong evidence-based interventions related to diabetes:

1. The Guide to Preventive Services (www.thecommunityguide.org) is an essential resource on what works in public health. The Community Preventive Services Task Force, an independent, non-federal body of public health and prevention experts develops the *Community Guide*. Recommendations are made based on systematic reviews of the scientific literature. Only evidence-based strategies rated as recommended are included in this report.

Evidence-based strategies related to diabetes are known and available.

2. *County Health Rankings – What Works* (www.countyhealthrankings.org/roadmaps/what-works-for-health) is a joint project of the Robert Wood Johnson Foundation and the University of Wisconsin. With external content experts, systematic and targeted literature reviews were conducted to determine the overall body of evidence that includes best practices from non-peer reviewed sources. Only evidence-based strategies rated as scientifically supported are included in this report.
3. The U.S. Preventive Services Task Force develops the *Guide to Clinical Preventive Services* (<https://www.uspreventiveservicestaskforce.org/>). The guide contains recommendations on the use of screening, counseling, immunizations, preventive medicines, and counseling services delivered in primary care settings. Grade A or B services, meaning there is high certainty that the net benefit is moderate to substantial, are included in this report.

Lifestyle factors, such as physical inactivity, poor diet, obesity, and tobacco use, can exacerbate both the symptoms of diabetes and the risk of acquiring another chronic condition...many complications from diabetes can be reduced through proper prevention, timely diagnosis, and disease management programs.

Source: SHSIP, 2016

Table 10 lists the evidence-based strategies, scientifically proven beneficial and cost-effective, for diabetes prevention identified by the three sources as of October 27, 2016.

TABLE 10. EVIDENCE-BASED STRATEGIES SPECIFIC TO DIABETES BY SOURCE

Sources: CSFTP (2016), University of Wisconsin (2016), and USPSTF (2016)

EVIDENCE-BASED STRATEGY	Community Guide	County Health Rankings	Clinical Preventive Services
Diabetes			
Self- Management Education in the Home - Children and Adolescents with Type 1 Diabetes	√	√	
Self-Management Education in Community Gathering Places – Adults with Type 2 Diabetes	√	√	
Combined Diet and Physical Activity Promotion Program to Prevent Type 2 Diabetes Among People at Increased Risk	√		
Case Management Interventions to Improve Glycemic Control	√		
Diabetes Management Programs	√	√	
Complementary Or Comprehensive Strategies Supporting Diabetes			
Cardiovascular Disease			
Clinical Decision-Support Systems	√	√	
Team-Based Care to Improve Blood Pressure	√		
Reducing Out-of-Pocket Costs for Cardiovascular Disease	√		
Preventive Services for Patients with High Blood Pressure and High Cholesterol			

EVIDENCE-BASED STRATEGY	Community Guide	County Health Rankings	Clinical Preventive Services
Self-Measured Blood Pressure Monitoring Interventions for Improved Blood Pressure Control – When Combined With Additional Support	√		
Self-Measured Blood Pressure Monitoring Interventions for Improved Blood Pressure Control – When Used Alone	√		
Interventions Engaging Community Health Workers	√		
Health Communications and Social Marketing			
Campaigns that include Mass Media and Health-Related Product Distribution	√		
Health Equity			
School Based Health Centers	√		
Culturally Adapted Health Care		√	
Telemedicine		√	
Patient Navigators		√	
Cultural Competence Training for Health Care Professionals		√	
Insurance			
Value-Based Insurance Design		√	
Maternal and Child Health			
Breastfeeding Promotion Programs		√	
Earned Income Tax Credit		√	
Mental Health			
Collaborative Care for the Management of Depressive Disorders	√		
Obesity			
Technology-Supported Multicomponent Coaching or Counseling Interventions to Reduce Weight	√		
Technology-Supported Multicomponent Coaching or Counseling Interventions to Maintain Weight	√		
Worksite Programs	√		
Oral Health			
School-Based Dental Sealant Delivery Programs	√		
Physical Activity			
Social Support Interventions in Community Settings	√		
Community-Wide Campaigns	√		
Prescriptions for Physical Activity		√	
Practice			
Quality Improvement Practice Coaches for Primary Care		√	
Medical Homes		√	
Preventive Services			
Patient Financial Incentives for Preventive Care		√	
Diabetes Screening as part of Cardiovascular Risk			√
Gestational Diabetes Screening			√

EVIDENCE-BASED STRATEGY	Community Guide	County Health Rankings	Clinical Preventive Services
Tobacco			
Reducing Out-of-Pocket Costs for Evidence-Based Cessation Treatments	√		
Smoke-Free Policies	√		
Worksite			
Worksite Assessment of Health Risks with Feedback to Change Employees' Health – With or Without Other Interventions	√		
Vaccination Programs			
Standing Orders	√		
Reduce Client Out-Of-Pocket Costs	√		
Health Care System-Based Interventions Implemented in Combination	√		

The OHCA and the OSDH support and promote the use of a variety of evidence-based strategies. Some of the strategies are known by more than one name. For more information, consult the referenced resource for detailed descriptions of the evidence-based strategies, the expected outcomes, cost-effectiveness, and return on investment.

Evidence-based public health is the process of integrating science-based interventions with community preferences to improve the health of populations.

Source: Kohatsu, 2004

OHCA Assessment of Benefits

The SoonerCare Health Management Program (HMP) is an ongoing quality improvement initiative to improve the lives of Oklahomans with chronic disease and reduce future incidence of disease. The HMP was mandated by the Oklahoma Medicaid Reform Act of 2006 (HB 2842) and directed OHCA to “develop a formal program for disease management to improve the quality of care and reduce the cost of care.” Diabetes was one of the conditions covered by the program.

Operated under an 1115(a) demonstration waiver from the Centers for Medicare and Medicaid Services (CMS), the HMP is a vendor-operated chronic disease initiative. The program receives partial federal funding via the most current Federal Medical Assistance Percentage (FMAP). This rate is 58.57% for Federal Fiscal Year 2018.

The HMP provides specially trained process clinical improvement support, through practice facilitators, to primary care practices with a significant population of SoonerCare members with chronic illnesses. The practice facilitators work with practices to identify opportunities for team-based care, implement evidence-based guidelines, teach process and quality improvement principles, and maximize use of electronic medical records and/or incorporation of a disease registry.

The HMP also provides specially trained registered nurses, known as health coaches, to high-target primary care practices, to work directly with high-risk members with chronic conditions, or members at-risk for chronic conditions. These health coaches are embedded in the practice and focus on health literacy and improvement of self-management skills. A smaller subset of members may also be served exclusively with telephonic services, based on their location and primary care provider selection. The health coaches are trained in motivational interviewing, an important behavior modification technique, and supported by Community Resource Specialists to address the members' resource and social needs. Members are identified through data mining (claims), predictive modeling software (MEDai), and clinician referral. Since chronic diseases often do not occur in isolation, a fundamental approach of the HMP is to identify patients based on overall risk, not specific conditions. While diabetes is highly prevalent in the HMP population, it is not a stand-alone criterion for identification of members or providers for participation in the HMP.

Health Coaching Outcomes

The SoonerCare HMP Evaluation for SFY 2014 demonstrated efficacy of this program in relation to the management (health coaching) of SoonerCare members with diabetes.

The Utilization and Expenditure portion of the evaluation revealed that 1,117 of the 4,914 (23%) HMP members studied had diabetes. Nearly two-thirds (66%, 738/1,117) of those with diabetes had diabetes as their highest cost condition. The majority of members with diabetes had other chronic conditions (Table 11).

TABLE 11. COMORBIDITIES AMONG HMP MEMBERS WITH DIABETES

Source: OHCA, 2015

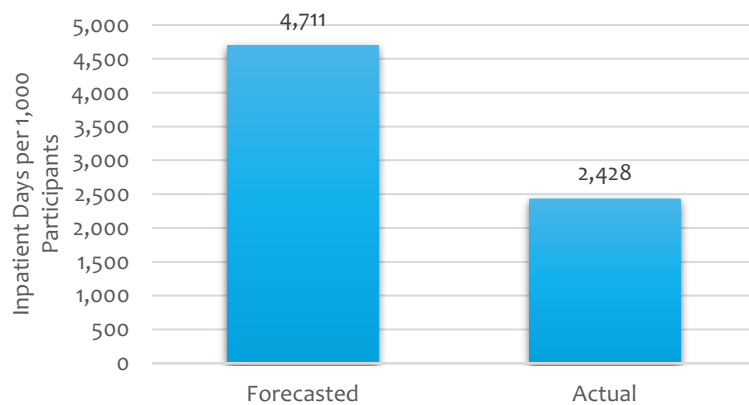
Comorbidity	%
Asthma	25
Coronary Artery Disease	23
Chronic Obstructive Pulmonary Disease	39
Heart Failure	13
Hypertension	81

Utilization and Expenditure Outcomes Analysis – Health Coaching

A utilization data analysis for the HMP member population with diabetes as their most expensive diagnosis revealed positive findings related to inpatient hospital days. These were calculated by comparing pre-intervention forecasted inpatient days as determined by MEDai, the predictive modeling tool used by OHCA, with actual inpatient days post-intervention. Actual inpatient utilization at 12 months following engagement was nearly 50% lower than forecasted (Figure 7). Positive findings were also found related

FIGURE 7. INPATIENT UTILIZATION AMONG HMP PARTICIPANTS WITH DIABETES AS THE MOST EXPENSIVE DIAGNOSIS, 12-MONTHS POST ENGAGEMENT

Source: OHCA, 2015



to per member per month medical (PMPM) expenditures, with MEDai forecasted expenditures of \$1,422 compared to actual expenditures of \$1,104.

The decrease in PMPM medical expenditures translated into aggregate savings for SFY 2014 of \$1,542,941.

Quality of Care Analysis – Health Coaching

The quality of care for health coaching participants (ages 18 to 75 years) with diabetes was evaluated through four clinical measures from the Healthcare Effectiveness Data and Information Set (HEDIS®). The measures studied are as follows:

- *LDL-C Test* (low-density lipoprotein or “bad cholesterol”): Percentage of members who received LDL-C test in previous 12 months;
- *Retinal Eye Exam* (examination of the retina of the eye): Percentage of members who received at least one dilated retinal eye exam in previous 12 months;
- *HbA1c Test* (hemoglobin (Hb) blood test that reveals level of blood sugar over time): Percentage of members who received at least one HbA1C test in previous 12 months; and
- *Medical Attention for Nephropathy* (kidney disease/damage due to complications of diabetes): Percentage of members who received medical attention for nephropathy in previous 12 months.

The HMP participant compliance rates were compared to compliance rates for the general SoonerCare population. The HMP participants had statistically better outcomes than the general SoonerCare population. It is important to note that the members with diabetes participating in the HMP program are generally among the highest risk members in the SoonerCare population, but results should be interpreted with caution due to the small sample size.

Practice Facilitation Outcomes

A major component of the SoonerCare HMP directs quality improvement support at primary care providers. Practice Facilitators work with the providers to analyze and map their workflow, establish team-based care, and implement clinical best practices. This leads to processes that are more effective and fewer missed care opportunities for patients with chronic illness.

The...health home concept takes previous models a transformative step further by not only acknowledging that factors outside the health care system affect patient health outcomes, but also actively participating in improving them.

Source: Cantor, 2011

Quality of Care Analysis – Practice Facilitation

A Quality of Care analysis explored outcomes specifically related to the Practice Facilitation component of the HMP. The impact of SoonerCare HMP practice facilitation on quality of care was measured using the HEDIS® measures applicable to the SoonerCare HMP population. The Diabetes measures for members aged 18 to 75 years were the same as the health coaching study portion. This

portion of the study focused on members who were aligned with a Patient Centered Medical Home (PCMH) provider who underwent practice facilitation. They also had to have a provider experience at least once following their own PCMH provider's initiation into practice facilitation. Members participating in the health coaching portion of the SoonerCare HMP were excluded from the analysis to avoid amplified impact of the program through duplicates. Medical attention for nephropathy was the one statistically different measure among the members aligned with practice facilitation providers and the comparison group.

Utilization and Expenditure Outcomes Analysis – Practice Facilitation

This study focused on 281 members attributed to the SoonerCare HMP practice facilitation sites who were not participating in health coaching and for whom diabetes was the most expensive diagnosis.

MEDai forecasted that members with diabetes included in the study would incur 5,223 inpatient days per 1,000 members over the 12-month forecast period. The actual rate was 2,566, or 49% of forecast.

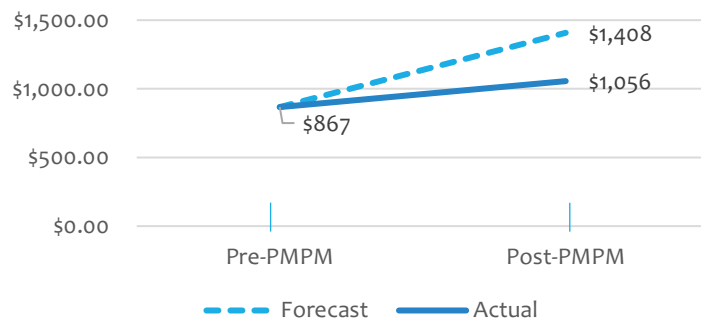
MEDai also projected that these members with diabetes would incur an average of \$1,408 in PMPM expenditures over the 12-month forecast period. The actual amount was determined to be \$1,056, or 75 % of the forecasted expenditures (Figure 8).

The aggregate dollar impact for members with diabetes was calculated by multiplying total months of enrollment in SFY 2014 following practice facilitation initiation and member interaction

with a provider, by the average PMPM savings. The savings equaled approximately \$513,000. The overall cost effectiveness of the practice facilitation program, *not exclusively focused on diabetes*, was determined by comparing forecasted costs to actual costs during SFY 2014, inclusive of SoonerCare HMP practice facilitation administrative expenses.

FIGURE 8. FORECAST AND ACTUAL PMPM EXPENDITURES AMONG MEMBERS WITH DIABETES AS THE MOST EXPENSIVE DIAGNOSIS

Source: OHCA, 2015



Return on Investment for Health Management Program

The SoonerCare Health Management Program, comprising health coaching and practice facilitation, has shown to be an effective method in improving quality of care and decreasing costs for members with diabetes. Study data shows that the SoonerCare HMP resulted in two dollars in savings for every dollar spent (Table 12).

TABLE 12. SAVINGS FROM HEALTH MANAGEMENT PROGRAM

Source: OHCA, 2015

	Health Coaching	Practice Facilitation	Total
Medical Savings	\$7,915,923	\$15,774,407	\$23,690,330
Administrative Costs	(\$4,511,073)	(\$3,230,657)	(\$7,741,729)
Net Savings	\$3,404,850	\$12,543,750	\$15,948,601
Return on Investment	75.5%	388.3%	206.0%

SoonerCare Population Care Management/Chronic Care Unit

The Pacific Health Policy Group, an independent evaluator, conducted a SoonerCare Chronic Care Unit (CCU) evaluation for State Fiscal Year 2014. Excerpts from the evaluation are provided in the following paragraphs and the entire report is located on the OHCA website at <http://www.okhca.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=17650&libID=16632>.

The independent evaluation determined that the CCU participants with diabetes had significantly higher compliance for medical attention for nephropathy. The independent evaluation study also determined possible CCU program impact related to inpatient utilization for members with diabetes. Members' inpatient days were 44% less than the inpatient days predicted by MEDai.

Adult Medicaid Quality Grant

From December 2012 through November 2015, OHCA participated in the Adult Medicaid Quality Grant (AMQG), funded by CMS. This grant program was initiated to support state Medicaid agencies in development of capacity to collect, report, and analyze data on the core set of health care quality measures for adults enrolled in Medicaid (Adult Core Set). Oklahoma was one of 26 states selected to participate in this grant program. In addition to building a clinical quality database to house the core measures, participating states were required to develop quality improvement projects surrounding selected adult core health measures.

One of Oklahoma's projects pertained to improvement of HbA1C testing for patients with diabetes. OHCA's AMQG team designed a two-pronged quality improvement program that targeted statewide providers and members simultaneously. The first prong involved providers in 354 PCMH who were not currently participating in another quality initiative with OHCA. They were provided information regarding members assigned to their PCMH panel that had a gap in care for HbA1C testing. This was followed by implementation of a broader quality improvement strategy to improve the performance regarding these tests. The AMQG team provided them with instruction and a toolkit binder. The second prong of the approach provided members who had a gap in care with a call to action letter, followed by individual telephonic outreach utilizing motivational interviewing principles to prompt action toward completion of the HbA1C test.

Outcomes of these combined efforts demonstrated successful provider engagement with 106 of the targeted providers via 420 office visits. Approximately 13,000 mailings with reminders and educational material were sent to targeted members. From April 2013 to November 2015, the HbA1C testing rates of the target group improved from 70.50% to 71.9%.

Other Diabetes and Health-Related Education

As a means to provide educational materials regarding diabetes to its members, OHCA developed <http://okhca.org/diabetes>. This website contains an educational video, "Managing Diabetes: Five Simple Tips." The objectives with the video were to 1) educate members about the severity of their condition and 2) empower members with tips to help make self-management of their diabetes easier. This 10-minute video covers the basics of diabetic living and is a starting point for further discussion with their health care providers. Additionally, complementary one-page documents that offer helpful information and advice were available for download from the diabetes webpage.

OSDH Assessment of Benefits

The OSDH diabetes-related efforts, funded by the CDC, include the design, implementation, and evaluation of public health prevention and control strategies to improve access and quality of care. Program emphasis is within health systems, health communications, and interventions within communities most impacted by the burden of diabetes.

Diabetes does not occur in the health system – it occurs where we live, work, and play.

Source: Yach, 2011

Small pilot projects and promoted interventions use the following evidence-based strategies:

- Combined Diet and Physical Activity Promotion Programs to Prevent Type 2 Diabetes among People at Increased Risk. Diabetes prevention programs have strong evidence of effectiveness in reducing new-onset diabetes and are cost-effective (Herman, 2013);
- Self-Management Education in Community Gathering Places – Adults with Type 2 Diabetes. Diabetes self-management education has sufficient evidence of effectiveness in improving glycemic control (TFCPS, 2002);
- Team-Based Care to Improve Blood Pressure Control. Interventions include multidisciplinary teams that provide process support and share responsibility of hypertension care to complement the activities of the primary care provider;
- Smoke-Free Policies to reduce exposure to secondhand smoke, increase cessations, and reduce youth smoking; and
- Policy, systems change, and environment strategies to increase physical activity and better nutrition.

Currently, the lack of payer reimbursement for programs that prevent type 2 diabetes, limited reimbursement for self-management education, lack of accredited or recognized prevention and self-management programs, and a limited workforce impede progress to implementation of evidence-based strategies to prevent diabetes and its complications.

Summary of Legislative Funding to Provide Diabetes Prevention

In SFY 2014 there were no state, federal, special, or other dollars appropriated by the Oklahoma Legislature specifically for diabetes or disease programs (NCSL, 2015).

The OSDH receives some federal dollars through time-limited grants that include, but are not limited to, diabetes. Some state funding provides support for FQHC uncompensated care; however, the funding is not specifically for diabetes.

OHCA receives state match Medicaid dollars that provide services for specific populations and include, but are not specific to, the identification and treatment of diabetes.

While each of these efforts addresses important needs of Oklahomans, none is solely dedicated to diabetes prevention or treatment.

Interventions in the primary care and community settings are useful in supporting sustained change in health literacy for change in behavioral risk factors.

Source: Taggart, 2012

Description of the Coordination between the OHCA and the OSDH

The OHCA and OSDH work together on many projects that include a variety of health-related efforts.

Quality Improvement

In 2014, the leadership at the OHCA and the OSDH implemented an interagency collaboration on crosscutting health issues that affect shared populations. The Joint Strategic Plan Steering Committee selected workgroup measures related to their knowledge, skills, and abilities to contribute to the workgroup efforts. The agencies have utilized these workgroups to increase education with providers, connect with SoonerCare members to provide additional information about health issues, and increase coordination among medical professionals and service providers in communities around the state. The interagency collaboration focused on five program improvement initiatives: diabetes/hypertension, childhood immunizations, prescription drug abuse, obesity, and tobacco use. The quality improvement (QI) workgroups worked to design interventions that could move Oklahoma populations to better health outcomes. During the 2015-2016 QI cycle, the *diabetes QI workgroup merged with the hypertension QI workgroup* to combine efforts in these co-occurring health conditions. The combined workgroup provided training around community resources for type 2 diabetes prevention and diabetes self-management for those diagnosed with type 1 or type 2 diabetes.

The *OHCA Strategic Plan SFY 2017-2018* provides additional information on the QI workgroups. The OHCA and OSDH tobacco use QI workgroup aims to reduce the smoking rate by improving access to tobacco cessation products and services. A data-driven assessment will inform system and policy recommendations for tobacco use treatment. The joint immunization QI workgroup addresses interventions aimed at improving childhood immunization rates. The first initiative was successful in Bryan County with a 3.5% increase in immunization rates. The initiative will be expanded in the same service area. Another initiative includes provider outreach and education about missed opportunities and using the media channels of news releases, social media messages, and other public information. The OHCA and OSDH childhood obesity QI workgroup has developed two strategies for implementation in select service areas. The initiative focuses on increasing utilization of nutritional services through referrals to nutritional counseling services. In addition, efforts will be made to integrate childhood obesity prevention into early childhood education. The prescription drug QI workgroup is using data to identify prescribers who are associated with prescriptions of SoonerCare members who died due to prescription drug overdoses. They will also focus on provider and pharmacist training. The *OHCA Strategic Plan SFY 2017-2018*, available online at www.okhca.org,

provides additional details on the QI workgroups, such as social, economic, and legislative assessment information for the state and the SoonerCare program.

Diabetes Caucus

Both the OHCA and OSDH provide support to the Diabetes Caucus and its effort to achieve meaningful results in both the quality of life of individuals and lessening the economic burden of diabetes. The Diabetes Caucus, established by Senator Susan Paddock (D-Ada) and Representative Jeannie McDaniel (D-Tulsa), has worked to bring diabetes to the forefront of statewide health efforts and provide funding for diabetes. Those attending the Diabetes Caucus include health system representatives (32%), representatives from state agencies and local health departments (21%), tribal representatives (16%), lobbyists (14%), legislators and staff (9%), advocacy groups (5%), and quality improvement organizations (3%).

The Diabetes Caucus has three subcommittees: advocacy, clinical, and policy. The advocacy group serves as the voice for the people with diabetes and their families. They build relationships with legislators, the media, and community partnerships to aid those whose lives are challenged by diabetes.

The clinical group is dedicated to improve access to evidence-based practices that prevent diabetes and the complications associated with the disease. The group recognizes that sustaining these services requires adequate reimbursement, especially for diabetes self-management training for prediabetes and diabetes self-care. The American Medical Association and CDC encourage referral of those who have prediabetes to the National Diabetes Prevention Program (NDPP), which can reduce the risk of developing type 2 diabetes by 58%.

The policy group explored diabetes prevention programs (DPP) as a benefit to state employees to save health care costs and to build infrastructure across the state. Some of the caucus discussions have focused on broadening the reimbursement for accredited/recognized diabetes self-management programs and diabetes prevention programs.

Diabetes Prevention Group

Some Diabetes Caucus members have initiated a Diabetes Prevention Group to explore ways to expand and develop lifestyle training, primarily DPP. After five meetings, the attendance has grown from eight in October 2015 to 82 in October 2016. The October 2016 state engagement meeting was 1.5 days of action planning for diabetes prevention. The OHCA has policy considerations under review for reimbursement options for diabetes prevention and self-management education. Medicare will implement prevention education coverage in 2018.

Senate Bill 250

The OHCA and the OSDH continued their collaboration in the preparation of this *Diabetes Prevention* report. The collaboration will continue with the preparation of robust reports every odd numbered year to meet the spirit and the requirements of Senate Bill 250, authored by Senators Susan Paddock (D-Ada) and Anastasia Pittman (D-OKC) of the Senate and Representatives Lee Denney (R-Cushing) and Jeannie McDaniel (D-Tulsa) of the House. Moreover, OHCA and OSDH coordination and collaboration will continue with the implementation of the action plans to prevent diabetes. It is clear that the prevention, treatment, and control of all types of diabetes will take a coordinated approach

for which the OHCA, OSDH, and Oklahoma Legislature must take complementary and collaborative approaches to promote well-being of Oklahomans.

DISCUSS

The OHCA and OSDH, along with the Oklahoma Department of Mental Health and Substance Abuse Services and the Department of Rehabilitation Services have a shared-services governance board, under the direction of the Oklahoma Health and Human Services Cabinet Secretary. Identified as Deliver Interoperable Solution Components Utilizing Shared Services (DISCUSS), the board focuses on identifying shared technology and gathering resources for the mutual benefit of the partnership. A prominent DISCUSS project is the development of a statewide health information exchange (HIE) to improve communication between health care providers in the state. Additionally, OHCA staff members served on the leadership and workgroup teams for the OSIM grant, a federal award to the OSDH, to provide state-based solutions to Oklahoma's health care challenges.

Provision of Services

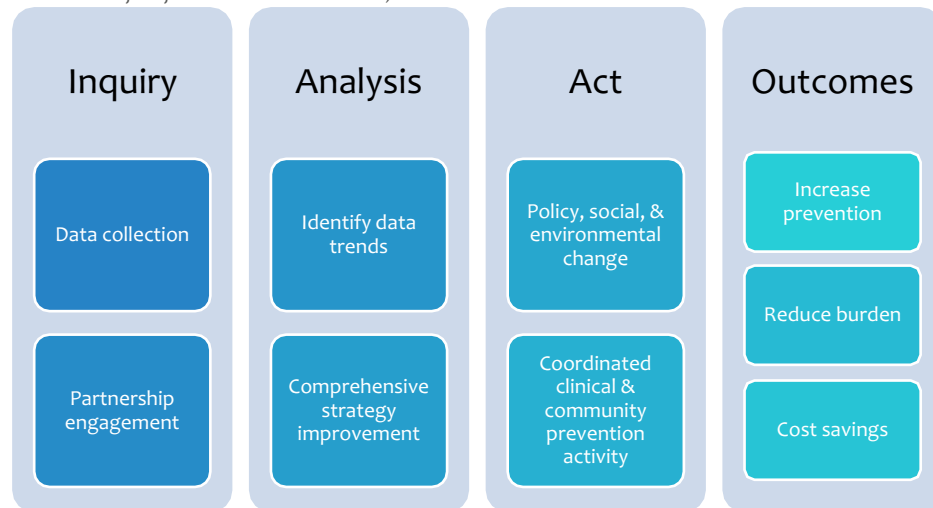
The OHCA and OSDH work together to achieve the mission set forth by the *Breast and Cervical Cancer Prevention and Treatment Act of 2000* to provide medical assistance through SoonerCare for women screened by the OSDH's BCCEDP program.

Recommended Action Plan

The process for enabling people to increase control over and to improve their health must be comprehensive, especially when it comes to diabetes. Two distinct models were used to ensure the development of a wide-ranging action plan. The first, shown in Figure 9, is a clinical/community population health

FIGURE 9. CLINICAL/COMMUNITY POPULATION HEALTH INTERVENTION MODEL

Source: Modified from Prevention Institute, 2011



intervention model that includes four categories of actionable items: inquiry, analysis, act, and outcomes that work together, focusing on efforts to bridge the gap between health services and community prevention. Based upon the premise that health is created and lived by people where they learn, live, work, and play, the second model (Figure 10) harnesses the power of five action areas that

work together to promote overall well-being. Definitions for each action area are provided below the figure.

FIGURE 10. HEALTH PROMOTING ACTION AREAS

Source: WHO, 1986



BUILD HEALTHY PUBLIC POLICY: Putting health on the agenda of policy makers in all sectors and at all levels brings awareness to the health consequences of their decisions and their responsibilities for health (CDC, 2016).

CREATE SUPPORTIVE ENVIRONMENTS: Broad based efforts are needed to generate living and working conditions that are sources of health (not impacts on health) for people (CDC, 2016).

STRENGTHEN COMMUNITY ACTION: Community action in priority setting, decision-making, and strategy implementation is grounded in community ownership and control (Cantor, 2011).

DEVELOP PERSONAL SKILLS: Actions through school, home, work, and community are required to facilitate people preparing themselves for all stages of life, including times of chronic illness (CDC, 2015).

REORIENT HEALTH SERVICES: The health sector, working with others, must move beyond the provision of clinical and episodic services to individuals towards approaches that contribute to the pursuit of health within the community (IOM, 2012).

Steps to Reduce the Impact of Diabetes, Prediabetes, and Related Diabetes Complications

The OHCA and OSDH along with partners from employers, tribes, health care organizations, private payers, communities, and advocates must undertake a comprehensive action plan together. Therefore, Diabetes Prevention Group and Diabetes Caucus self-determined, planned efforts are presented along with OHCA and OSDH goals. *The lighter colored font indicates the efforts lead by other partners and darker colored font highlights efforts lead by OHCA and OSDH.* The action plan is inclusive of goals, objectives, lead partner, target population, action area, and action steps.

Goal 1: Reduce the Incidence of Diabetes

Objective 1.1: Prevent the development of risk factors

Lead Partner: OSDH

Target Population: Statewide

Action Area: Health in all policies

Action Steps

- Promote school-based programs to increase physical activity
- Develop safe routes to school
- Implement tobacco control best practices
- Encourage multi-component worksite obesity prevention

Action Area: Creating supportive environment

Action Steps

- Promote bike lanes, playgrounds, sport facilities, walking trails
- Provide technical assistance and support for supermarkets and workplace cafeterias to offer healthy and affordable drink and food options
- Increase clean air environments

Action Area: Strengthen community actions

Action Steps

- Prepare county health improvements plans
- Identify priorities and strategies with community partners
- Promote everyday physical activity
- Make healthy nutrition available
- Promote tobacco helpline among those with diabetes and community partners

Objective 1.2: Increase community awareness of the benefits of being tested

Lead Partner: Diabetes Prevention Group and Diabetes Caucus

Target Population: Statewide population and those connected with health systems

Action Area: Strengthen community actions

Action Steps:

- Coordinate activity with community partners
- Act as community health advocates and identify gaps
- Mobilize patient population
- Strengthen partnerships with local health care organizations
- Develop toolkit for businesses and practices
- Maintain website for existing programs and class schedules

Objective 1.3: Increase detection of elevated blood sugar among those who are at risk

Lead Partner: Diabetes Prevention Group and Diabetes Caucus

Target Population: Health systems, software vendors, payers, and laboratories

Action Area: Reorient health services

Action Steps

- Promote screening for abnormal blood glucose in those who are overweight or obese as part of a cardiovascular risk assessment
- Promote screening through intake prompts
- Ensure electronic health records (EHR) to identify cases
- Expand the number of labs that flag elevated HbA1c results
- Encourage private, public, and employer-based payers to cover screening

Objective 1.4: Prevent the development of diabetes among those with elevated blood sugar

Lead Partner: Diabetes Caucus and Diabetes Prevention Group

Target Population: Health systems, payers, employers, and other partners

Action Area: Reorient health services

Action Steps

- Identify leverages for payers and providers to provide evidence-based programs
- Support development of additional payer-supported DPP models
- Expand access to DPP, a lifestyle change program for preventing type 2 diabetes
- Promote referral to DPP for patients at risk for type 2 diabetes
- Encourage workplaces as places for screening and prevention

Action Area: Develop personal skills

Action Steps

- Develop skills and health behaviors to prevent or delay the development of diabetes.
- Provide access to programs through work and community to facilitate people preparing themselves for all stages of life

Goal 2: Improve Services for Those with Diabetes

Objective 2.1: Increase the percentage of people with diabetes who receive on-time recommended preventive services

Lead Partner: OHCA

Target Population: SoonerCare members

Action Area: Reorient health services

Action Steps

- Support patient-centered medical homes and coordinated team approach
- Increase on-time preventive services for those with diabetes
- Encourage health information technology (HIT) supported integration of care
- Ensure adequate patient-centered medical home capacity

Objective 2.2: Increase the number of SoonerCare members who complete diabetes self-management education

Lead Partner: OHCA

Target Population: SoonerCare members

Action Area: Reorient health services

Action Steps

- Expand covered prevention and health promoting efforts
- Increase referrals to social support and community services
- Monitor patients' satisfaction with services with survey

Goal 3: Prevent Complications from Diabetes

Objective 3.1: Reduce smoking among people with diabetes

Lead Partner: OHCA

Target Population: SoonerCare members

Action Area: Reorient health services

Action Steps

- Increase referrals to Oklahoma Tobacco Helpline
- Encourage health information technology (HIT) supported integration of care

Objective 3.2: Reduce preventable hospitalizations from undiagnosed diabetes

Lead Partner: OSDH

Target Population: Underserved, uninsured populations

Action Area: Develop personal skills

Action Steps

- Expand access to DPP, lifestyle change program for preventing type 2 diabetes through technology and partnerships
- Promote referral to DPP for patients at risk for type 2 diabetes
- Promote development of community resources for screening, referral, and programs

Goal 4: Increase Understanding of the Prevalence and Incidence of All Types of Diabetes

Objective 4.1: Expand public health surveillance of all types of diabetes

Lead Partner: OSDH

Target Population: Statewide

Action Area: Reorient health services

Action Steps

- Analyze existing hospital discharge and, when available, emergency department data for all types of diabetes as reportable conditions for special study
- Explore chronic disease registry function of electronic health records
- Determine feasibility of use of health information exchange for surveillance
- Support efforts to obtain aggregated height/weight measures on children (K-8th grade) as a measure of diabetes risk

Actionable Items for Consideration by the Legislature

Diabetes prevention is essential to improve the state of Oklahoma's health. The State retains primary responsibility for health under the 10th Amendment of the U.S. Constitution (IOM, 2003). The 10th Amendment enunciates the plenary power retained by the states: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States

respectively, or to the people.” The following legislative actions are recommended to set the conditions for diabetes prevention in Oklahoma:

1. Support diabetes as a reportable condition for special study using non-public data files for existing hospital discharge data (63 O.S. (Supp. 1994) § 1-115 et seq.) and emergency department data, as it becomes available.
2. Dedicate funding for OSDH to address diabetes risk factors in communities and, additionally, provide diabetes prevention programs to in-need and low-resource populations. The NDPP recognizes a variety of lifestyle (collection of behaviors) change curricula that prevent type 2 diabetes (CDC, 2015).
3. Increase funding for OHCA (SoonerCare) to conduct diabetes prevention and education programs for members with diabetes. Without additional state funding, others would have to go without services in order to reimburse DPP or diabetes self-management education for members with or at risk of diabetes.

Identification of Expected Outcomes of the Action Steps

The action steps listed previously work together to accomplish objectives. The objectives collectively achieve the goals. The goals produce the outcomes. Table 13 presents the coupling of objectives and goals that together will lead to the expected outcomes.

TABLE 13. EXPECTED OBJECTIVES, GOALS, AND OUTCOMES

Objectives	Goals	Outcomes
1.1 Prevent the development of risk factors	1. Reduce the Incidence of Diabetes	Increase Prevention
2.1 Increase the percentage of people with diabetes who receive on-time recommended preventive services	2. Improve Services for Those with Diabetes	
2.2 Increase the number of SoonerCare members who complete diabetes self-management education		Reduce Burden
3.1 Reduce smoking among people with diabetes	3. Prevent Complications from Diabetes	Cost Savings
3.2 Reduce preventable hospitalizations from undiagnosed diabetes		
4.1 Expand public health surveillance of all types of diabetes	4. Increase Understanding of the Prevalence and Incidence of All Types of Diabetes	

Benchmarks for Action Plan

The ability to reach benchmark targets is dependent largely upon availability of state and federal funding. Figure 11 illustrates the identified population, specific action strategies for policy, social, and environmental change, and coordinated clinical/community interventions in which the OHCA and OSDH will engage to accomplish the action plan.

FIGURE 11. KEY BENCHMARKS FOR ACTION PLAN

Source: Modified from Yack, 2011.



Table 14 provides detail to the benchmark and associated targets. As appropriate, Healthy People 2020 was consulted for benchmark and target selection.

TABLE 14. BENCHMARKS AND TARGET SETTING

Audience	Benchmark	Target
Statewide Population	Counties with Health Improvement Plans	25% improvement in 2 years
	Organizations and communities that participate with Certified Healthy Oklahoma to provide: Better food environments Easier access to physical activity Improved clean air environments	20% improvement in 2 years for each benchmark
People at Risk and In Need	Screening of those at risk and served by Federally Qualified Health Centers	10% improvement in 2 years
	Diabetes prevention programs for those uninsured or underinsured	20% improvement in 2 years
	Diabetes prevention programs referring participants to the Oklahoma Tobacco Helpline	25% improvement in 2 years
	Diabetes-related preventable hospitalizations for: Lower extremity amputation Short-term complications of diabetes	5% improvement in 2 years for each hospitalization benchmark
Members with Diabetes	SoonerCare members with diabetes who contact the Oklahoma Tobacco Helpline	10% improvement in 2 years
	SoonerCare members with diabetes who receive recommended preventive care: Foot exam once in 12 months Dilated eye exam once in 12 months HbA1c at least twice in 12 months	5% improvement in 2 years for each preventive care benchmark
	SoonerCare members who are newly diagnosed with diabetes who receive self-management education	5% improvement in 2 years

Detailed Budget Blueprint

Based upon the goals, objectives, and action steps written within the Diabetes Prevention Action Plan, specific goal-related activities are described in the following section for consideration by the Oklahoma Legislature.

The activities and budget items are based on scientific evidence of what works to improve outcomes for those with and at risk for diabetes. Budget ranges are provided for consideration by the Oklahoma Legislature. Budgeted activities and amounts are for the first two years of plan implementation by the OHCA and OSDH.

Goal #1 Reduce the Incidence of Diabetes

DESCRIPTION

Community Health Improvement:

Provide community grant to five county health departments that have identified diabetes, obesity, nutrition, or physical activity as a priority in their county health improvement plans. Those eligible to apply for funds would implement selected activities from a list of evidence-based strategies to prevent diabetes and conduct an associated evaluation element (\$500,000).

Certified Healthy

Offer training opportunities for communities to support systems and policy changes. A portion of the training would allow those interested in Certified Healthy to learn from peers who have already made substantial changes for healthier environments (\$120,000).

NEEDS

County health departments offer a variety of clinical, behavioral, and public health services through a blend of funding. However, the diabetes-related priorities identified by the community health improvement plans often do not have funding sources to facilitate action, even if evidence-based.

Systems and policy change is a cost-effective way to improve a population's health. Changing policy and support structures is challenging at all levels. Few resources are available to assist local businesses, college campuses, communities, congregations, early childhood programs, restaurants, and schools to support health.

RESOURCES

The OSDH makes training and technical support available to county health departments to assist them to develop county health needs assessments and community health improvement plans.

Efforts are currently underway at the OSDH and county health departments. For more information visit certifiedhealthyok.com/.

Costs

\$620,000

No New
Cost

Continue current
efforts

Goal #2 - Improve Services for Those with Diabetes**DESCRIPTION**On-Time Preventive Services for SoonerCare Members

On-time preventive services are promoted through health homes, care coordination, and health coaches among SoonerCare members with diabetes who are at highest risk. Efforts to include additional members will require special funds (\$1,000,000).

Diabetes Prevention and Self-Management Education Promotion

As efforts to provide diabetes prevention and self-management education increase, effectiveness and efficiencies must be maintained and improved. Independent evaluation of SoonerCare member participation, engagement, and satisfaction with services is needed (\$250,000).

Tobacco Cessation Referrals

Diabetes self-management training and education programs will be requested to refer to the Oklahoma Tobacco Helpline. Promotional materials will be provided to the programs for ease of distribution and consistency of message (\$150,000).

NEEDS

Appropriate clinical management and patient self-management practices can prevent much of the sickness and death associated with diabetes.

Controlling blood sugar and stopping the use of tobacco products are critical to prevention of diabetes complications, such as blindness, kidney disease, nerve damage, and heart disease.

Comprehensive diabetes self-management education has been shown to improve outcomes for people with diabetes and have a return on investment.

The OHCA will focus on serving the health care needs of the most vulnerable Oklahomans.

RESOURCES

Maintain current efforts in quality improvement and cost-saving efforts for diabetes case management and health.

Efforts are underway to develop OHCA policy to address costs and workforce issues related to diabetes self-management and education.

Costs \$1,400,000

No New Cost Continue current efforts

Goal #3 - Prevent Complications from Diabetes**DESCRIPTION**

The Diabetes Prevention Program (DPP) will be delivered using telehealth technology at county health departments called Life Size. With memorandums of understanding, referrals will come from FQHCs that wish to participate. The demonstration project, serving an estimated 80 individuals, will be evaluated as a part of the CDC recognition process (\$31,000).

Support for DPP in High Need Areas

Through contractual agreements, the OSDH would support development of four DPP in high need areas until recognized by CDC and able to receive reimbursement. DPP will serve approximately 80 individuals (\$70,000).

Explore DPP for uninsured individuals at risk

Contract with DPP to expand reach of prevention programs to 400 uninsured individuals at high risk, served by FQHCs, and compare results with programs delivered using telehealth and in-person (\$190,200).

Tobacco use screening and referral

DPP and SoonerCare providers will refer clients to the Oklahoma Tobacco Helpline (\$0).

NEEDS

A substantial proportion of diabetes-related hospitalizations occur among those who are low income or uninsured.

The risk of developing type 2 diabetes is five times higher among those with prediabetes compared to those with normal blood glucose (Zhang, 2010). DPP is a lifestyle change program that provides long-term dietary change, physical activity, and problem-solving strategies for sustainable weight loss and healthy lifestyle. DPP has been shown to prevent or delay the development of type 2 diabetes among those with prediabetes.

Oklahoma needs more DPP to decrease the incidence of diabetes. To date, only one reimbursement source is planned. New Medicare rules that allow trained community health workers or health professionals to conduct CDC-approved DPP become effective January 1, 2018. CDC's recognition of DPP includes program evaluation and takes two years. There is no payer reimbursement during the recognition process.

RESOURCES

The OSDH has upgraded the video conferencing system in 68 county health departments and the OSDH. The OSDH also has existing contracts with many FQHCs to reimburse for uncompensated care. This program can be leveraged for the provision of DPP.

The OHCA's recent effort to promote health screenings, including HbA1c, continues to identify at-risk individuals.

The Diabetes Prevention Group and other partners have already come together to address diabetes prevention in Oklahoma. OSDH staff members who are involved with the group will promote the use of referrals to the Oklahoma Tobacco Helpline as a resource.

Costs \$291,200

No New Cost Current efforts plus referrals to Helpline

Goal #4 - Increase Understanding of the Prevalence and Incidence of All Types of Diabetes

DESCRIPTION

Special Study Using Existing Data

Analyze existing hospital discharge and, when available, emergency department data for all types of diabetes. The Commissioner of Health can declare diabetes as a reportable condition for special study. This would allow use of non-public data use files for detailed analysis. In-kind efforts from the OSDH would support the study (in-kind).

Pilot of Body Mass Index (BMI) surveillance for children

OSDH staff will be allocated to explore the feasibility of chronic disease registry function of electronic health records, health information exchange for surveillance, and active surveillance methods for representative height/weight measures on children (K-8th grade) as a measure of diabetes risk and program evaluation (\$562,000).

NEEDS

Health care providers are increasingly concerned about the growing number of children they see with diabetes and at risk of diabetes.

Currently, existing public health surveillance on all types of diabetes cannot answer many questions about diabetes among children or gestational diabetes.

Ongoing, systematic data collection and analysis of data related to diabetes and other chronic diseases is vital for health planning, action, and evaluation.

RESOURCES

The OSDH and the OHCA are engaged in several efforts to make efficient and effective use of existing data for policy and programmatic decision-making at the state and local level. Opportunities will be made available to support enhanced surveillance with this effort.

Costs \$562,000

No New Cost Special study using existing data

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APPENDIX 1. Senate Bill 250

An Act

ENROLLED SENATE
BILL NO. 250

By: Paddack and Pittman of the
Senate

and

Denney and McDaniel
(Jeannie) of the House

An Act relating to diabetes prevention; directing Oklahoma Health Care Authority and State Department of Health to collaborate for development and submission of certain report; providing standards for report; providing for certain limitation; providing for codification; and providing an effective date.

SUBJECT: Diabetes prevention

BE IT ENACTED BY THE PEOPLE OF THE STATE OF OKLAHOMA:

SECTION 1. NEW LAW A new section of law to be codified in the Oklahoma Statutes as Section 7301 of Title 63, unless there is created a duplication in numbering, reads as follows:

A. The Oklahoma Health Care Authority and the State Department of Health shall collaborate to identify benchmarks and develop goals to reduce the incidence rates of, improve health care services for, and control complications resulting from diabetes.

B. The Authority and the Department shall submit a report to the President Pro Tempore of the Senate and the Speaker of the House of Representatives by January 10th of odd-numbered years. Such report shall contain the following information:

1. The fiscal impact of all types of diabetes on the Authority, the Department, and county health departments including the number of persons with diabetes receiving services through the Authority, the Department, and county health departments;

2. The fiscal impact of diabetes on the Authority, the Department, and county health departments in comparison to other chronic diseases;

3. An assessment of the benefits of diabetes prevention programs including a summary of funding directed to the Authority and the Department from the Oklahoma State Legislature;

4. A description of coordination between the Authority and the Department including, but not limited to, programs relating to the treatment and prevention of all forms of diabetes;

5. Detailed action plans for battling diabetes with actionable items for consideration by the Legislature including, but not limited to, steps to reduce the impact of diabetes, pre-diabetes, and related diabetes complications;

6. Identification of expected outcomes of the action steps and benchmarks for controlling and preventing all forms of diabetes; and

7. The development of a detailed budget blueprint identifying needs, costs, and resources required to implement the plan provided for in this act. Such blueprint shall include a budget range for all options presented in the plan for consideration by the Legislature.

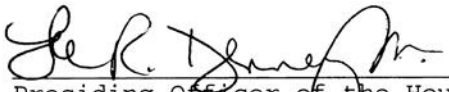
C. The provisions of this act shall be limited to diabetes information, data, initiatives, and programs within the Authority and the Department prior to the effective date of this act, unless there is available funding for diabetes in each agency that may be used for new research, data collection reporting or other requirements of this act.

SECTION 2. This act shall become effective November 1, 2015.

Passed the Senate the 5th day of March, 2015.


Presiding Officer of the Senate

Passed the House of Representatives the 2nd day of April, 2015.


Presiding Officer of the House
of Representatives

OFFICE OF THE GOVERNOR

Received by the Office of the Governor this 7th
day of April, 20 15, at 2:40 o'clock pm M.

By: Summer Curry

Approved by the Governor of the State of Oklahoma this 10th
day of April, 20 15, at 9:38 o'clock A M.


Governor of the State of Oklahoma

OFFICE OF THE SECRETARY OF STATE

Received by the Office of the Secretary of State this 10th
day of April, 20 15, at 1:48 o'clock P. M.

By: Chris Mancus



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